

THE OCCURRENCE OF *DESMONEMA GAUDICHAUDI* (LESSON) (SCYPHOZOA, SEMAEOSTOMEAE) IN SOUTH AUSTRALIAN WATERS WITH RECORDS OF FISH-JELLYFISH SYMBIOSES

The genus *Desmonema* L. Agassiz, 1862 (Scyphozoa, Semaestomeae) currently contains three species.¹ It has an Antarctic to sub-Antarctic distribution^{2,3} but is unrecorded in Australian waters (the record of *D. rosea* Agassiz & Mayer from Largs Bay, S. Aust.,⁴ refers to a species of *Cyanea* — see comment at end of this note).

Two specimens of *D. gaudichaudi* (Lesson) are recorded here for South Australian waters. Both were found in symbiotic relationship with fishes. Other jellyfish-fish symbioses from southern and eastern Australian waters are documented. Material is deposited in the South Australian Museum (SAM). Numbers prefixed by A refer to registrations in the notebooks of R.V.S.

Desmonema gaudichaudi (Lesson) (SAM H348 (A1156)).

Bell width to turnover edge 11 cm; same measurement with bell laid flat 14 cm; 10-15 tentacles/group. Coll. S. A. Shepherd, 29.iv.1969, 1 m depth, West Island (N. side), Encounter Bay. With SAM F5615 (A1157), a juvenile trevally *Pseudocaranx dentex* (Bloch & Schneider) (earlier *Usacaranx georgianus* (Cuvier & Valenciennes)) "living under the mantle".

D. gaudichaudi SAM H349

Bell width to turnover edge 13 cm; same measurement with bell laid flat 15 cm; c. 20 tentacles/group. Coll. W. Potts and D. Phillips, 19.ii.1986, opposite Point Campbell, Coorong, SAM F5616, with 9 small hardyheads, family Atherinidae (partially decomposed), among tentacles (possibly *Atherinosoma microstoma* (Günther), the only member of the family currently recorded from the Coorong⁵).

Previous records of *D. gaudichaudi* with "juvenile fishes, mostly of the genus *Trachurus*", family Carangidae, have been recorded from New Zealand⁶.

Symbioses between jellyfishes and fishes have been reviewed comprehensively.⁷ Further records from Australian waters are as follows:

1. Unnamed species in association with juvenile yellowtail sead, *Trachurus maccullochi* Nichols.^{8,9}

2. *Pseudorhiza haeckeli* Haacke (Rhizostomeae)

(a) A1015, coll. S. A. Shepherd, 1.iii.1968, near surface, Aldinga Reef, S. Aust. (off "Aldinga drop-off"), SAM F5614 (A1017), 3 small *Pseudocaranx dentex* and several *Eirene menoni* Kramp (Hydrozoa, Leptomedusae) (A1016) in association with the rhizostome.

(b) SAM H350 (A1391). Coll. S. A. Shepherd, 25.j.1973, depth 3 m. West Island, 15-16 small *P. dentex* (four

sampled, SAM F3905), and one small amphipod in association with the jellyfish.

(c) Jellyfish identified but not retained, 23.i.1975, Glenelg, S. Aust., with juvenile *P. dentex* (SAM F4238).

3. *Catostylus mosaicus* (Quoy & Gaimard) (Rhizostomeae) SAM H351 (A884), Bell width 27 cm. Coll. R. V. Southcott, 7.viii.1965, Port Hacking, N.S.W., with juveniles of *T. maccullochi* (SAM F5617 (A886)). This association has been figured previously, Plate 15¹⁰.

4. *Chrysaora* sp. (Semaestomeae). Coll. R. V. Southcott, 17.i.1980, "Cape Jervis Station" of S. Aust. Dept. Fisheries, Gulf St Vincent, near surface, from F. R. V. Joseph Verco, (a) SAM H352 (A2305) with *P. dentex*, SAM F5611 (A2315).

(b) SAM H353 (A2306) with *P. dentex*, SAM F5612 (A2316).

(c) SAM H354 (A2307) with one juvenile mosaic leatherjacket, *Eubalichthys mosaicus* (Ramsay & Ogilby), SAM F5613 (A2335) (illustrated previously, Plate 14¹⁰).

(d) A2311, with *P. dentex*, SAM F5610 (A2317).

(There were 0-4 *P. dentex* symbiotic with each *Chrysaora*.)

5. *Cyanea capillata* (L.) (Semaestomeae), with juvenile leatherjackets (family Monacanthidae) (illustrated previously, Plates 14, 16¹⁰).

6. *Catostylus mosaicus*. Bass Strait, with juveniles of *E. mosaicus*¹¹.

Nomenclatorial note

Desmonema rosea Agassiz & Mayer, 1898,⁴ from Largs Bay, South Australia, is clearly a *Cyanea* and not a *Desmonema*, since it has both radial and concentric muscle strands in the subumbrella, and the tentacle origin sites are U-shaped, not linear. Mayer¹² synonymized this species with *Cyanea amniskala* von Lendenfeld, including in the synonymy also *C. muellerianthe* Haacke, 1887,¹³ from Gulf St Vincent, South Australia. Kramp (1965)¹⁴ concluded that both of these last-named species are synonyms of *C. capillata* (L.). It may be safely stated that in Gulf St Vincent there occurs one species of *Cyanea*, *C. capillata* (L.). By transferring *D. rosea* to *Cyanea* in 1910, Mayer created a potential secondary homonym of *Cyanea rosea* Quoy & Gaimard, 1824, from the Great Barrier Reef, which Kramp¹⁴ has regarded as a doubtful species of *Cyanea*, but possibly also a synonym of *C. capillata*. Thus four synonyms are available for *C. rosea* (Agassiz & Mayer).

¹Larson, R. (1986) Biology of the Antarctic Seas XVI. Antarctic Res. Ser. 41 (3), 59-165.

²Kramp, P. L. (1961) J. Mar. Biol. Assoc. U.K. 40, 1-469.

³O'Sullivan, D. (1982) ANARE Research Notes 4, 1-43.

⁴Agassiz, A. & Mayer, A. G. (1898) Bull. Mus. Comp. Zool. Harvard 32(2), 15-19.

⁵Glover, C. J. M., unpublished data.

⁶Kingsford, M., in Larson, R. (1986) Biology of the Antarctic Seas XVI. Antarctic Res. Ser. 41(3), Frontispiece and pp. 102, 148.

⁷Mansueti, R. (1963) Copeia (1963, 1), 40-80.

⁸Scott, T. D. (1962) "The marine and fresh water fishes of South Australia." Handb. Flora & Fauna S. Aust. (Govt Printer, Adelaide).

⁹Scott, T. D., Glover, C. J. M. & Southcott, R. V. (1974) "The marine and freshwater fishes of South Australia" (Second Edition). Handb. Flora & Fauna S. Aust. (Govt Printer, Adelaide).

¹⁰Southcott, R. V. (1982) Jellyfishes (Classes Scyphozoa and Hydrozoa), pp. 115-159. In Shepherd, S. A. & Thomas, I. M. (Eds.) "Marine invertebrates of southern

- Australia." Part I. Handb. Flora & Fauna S. Aust. (Govt Printer, Adelaide).
- ¹¹**Last, P. R., Scott, E. O. G. & Talbot, F. H.** (1983) "Fishes of Tasmania" (Tasmanian Fisheries Development Authority, Hobart).
- ¹²**Mayer, A. G.** (1910) Medusae of the World. Publicn. No. 109, Carnegie Instn.
- ¹³**Haacke, W.** (1897) Jena Z. Naturw. 20, 588-638.
- ¹⁴**Kramp, P. L.** (1965) Trans. R. Soc. S. Aust. 89, 257-278.

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